

FILE 'REGISTRY' ENTERED AT 02:21:04 ON 04 JUL 2009

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> cytokine/cn

L1 0 CYTOKINE/CN

=> e cytokine/cn

E1 1 CYTOKIN/CN

E2 1 CYTOKINASE/CN

E3 0 --> CYTOKINE/CN

E4 1 CYTOKINE (CARP CLONE M17 PRECURSOR)/CN

E5 1 CYTOKINE (CHICKEN CLONE 391)/CN

E6 1 CYTOKINE (CHICKEN CLONE 4 C-TERMINAL FRAGMENT)/CN

E7 1 CYTOKINE (CYPRINUS CARPIO CLONE M17 PRECURSOR)/CN

E8 1 CYTOKINE (FASTING-INDUCED ADIPOSE FACTOR) (HUMAN)/CN

E9 2 CYTOKINE (HUMAN AMP18 (ANTHUM MUCOSAL PROTEIN 18) PRECURSOR)  
/CN

E10 1 CYTOKINE (HUMAN ANTIGEN CD30 LIGAND)/CN

E11 1 CYTOKINE (HUMAN CLONE 1092454 GENE SCYA21 REFERENCE ISOFORM)  
/CN

E12 1 CYTOKINE (HUMAN CLONE ATCC-97486 PRECURSOR)/CN

=> e cytokine/

E13 1 CYTOKIN/BI

E14 1 CYTOKINASE/BI

E15 12890 --> CYTOKINE/BI

E16 46 CYTOKINES/BI

E17 2 CYTOKINESIN/BI

E18 104 CYTOKINESIS/BI

E19 310 CYTOKININ/BI

E20 2 CYTOKININS/BI

E21 391 CYTOL/BI

E22 12 CYTOLASE/BI

E23 241 CYTOLETH/BI

E24 241 CYTOLETHAL/BI

=> s e 15

795342 E

650643 15

L2 555 E 15

(E(W)15)

=> e integrin/

E25 2 INTEGRIGYMNATUS/BI

E26 1 INTEGRILIN/BI

E27 2830 --> INTEGRIN/BI

E28 8 INTEGRINS/BI

E29 27 INTEGRIPET/BI

E30 27 INTEGRIPETAL/BI

E31 27 INTEGRIPETALA/BI

E32 1 INTEGRIQUIN/BI

E33 1 INTEGRIQUINOL/BI

E34 1 INTEGRIQUINOLONE/BI

E35 12 INTEGRISTER/BI  
E36 12 INTEGRISTERONE/BI

=> e integrin/cn

E37 1 INTEGRIFOSIDE D/CN  
E38 1 INTEGRILIN/CN  
E39 2 --> INTEGRIN/CN  
E40 1 INTEGRIN (765-ISOLEUCINE) (CHICKEN CLONE 1D SUBUNIT PRECURSOR REDUCED)/CN  
E41 1 INTEGRIN (788-GLUTAMIC ACID) (CHICKEN CLONE 1D SUBUNIT PRECURSOR REDUCED)/CN  
E42 1 INTEGRIN (788-PHENYLALANINE) (CHICKEN CLONE 1D SUBUNIT PRECURSOR REDUCED)/CN  
E43 1 INTEGRIN (790-ASPARTIC ACID) (CHICKEN CLONE 1D SUBUNIT PRECURSOR REDUCED)/CN  
E44 1 INTEGRIN (790-METHIONINE) (CHICKEN CLONE 1D SUBUNIT PRECURSOR REDUCED)/CN  
E45 1 INTEGRIN (CHICKEN CLONE 1D SUBUNIT PRECURSOR PROTEIN MOIETY REDUCED)/CN  
E46 1 INTEGRIN (CHICKEN CLONE 1D SUBUNIT PROTEIN MOIETY REDUCED)/CN  
E47 1 INTEGRIN (DROSOPHILA MELANOGASTER GENE VOLADO ISOFORM VOL-S)/CN  
E48 1 INTEGRIN (DROSOPHILA MELANOGASTER GENE VOLADO ISOFORM VOL-S) FUSION PROTEIN WITH 64-1115-INTEGRIN (DROSOPHILA MELANOGASTER GENE VOLADO ISOFORM VOL-L)/CN

=> s e39

L3 2 INTEGRIN/CN

=> s e15

L4 12890 CYTOKINE/BI

=> file caplus, biosis, medline, embase

FILE 'CAPLUS' ENTERED AT 02:24:19 ON 04 JUL 2009  
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FILE 'BIOSIS' ENTERED AT 02:24:19 ON 04 JUL 2009  
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FILE 'MEDLINE' ENTERED AT 02:24:19 ON 04 JUL 2009

FILE 'EMBASE' ENTERED AT 02:24:19 ON 04 JUL 2009  
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=> s L3

L5 15008 L3

=> S L4

3 FILES SEARCHED...

L6 57377 L4

=> (cell growth factor)

2 FILES SEARCHED...

L7 20659 (CELL GROWTH FACTOR)

=> silk fibroin  
L8 4734 SILK FIBROIN

=> l5 and l6  
L9 47 L5 AND L6

=> L7 and L9  
L10 0 L7 AND L9

=> L7 and L8  
L11 1 L7 AND L8

=> d bib, ti, abs L11

L11 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2009:245335 CAPLUS

DN 150:456348

TI Growth factor gradients via microsphere delivery in biopolymer scaffolds  
for osteochondral tissue engineering

AU Wang, Xiaojin; Wenk, Esther; Zhang, Xiaohui; Meinel, Lorenz;  
Vunjak-Novakovic, Gordana; Kaplan, David L.

CS Department of Biomedical Engineering, Tufts University, Medford, MA,  
02155, USA

SO Journal of Controlled Release (2009), 134(2), 81-90  
CODEN: JCREEC; ISSN: 0168-3659

PB Elsevier B.V.

DT Journal

LA English

TI Growth factor gradients via microsphere delivery in biopolymer scaffolds  
for osteochondral tissue engineering

AB Temporally and spatially controlled delivery of growth factors in  
polymeric scaffolds is crucial for engineering composite tissue  
structures, such as osteochondral constructs. In the present study,  
microsphere-mediated growth factor delivery in polymer scaffolds and its  
impact on osteochondral differentiation of human bone marrow-derived  
mesenchymal stem cells (hMSCs) was evaluated. Two growth factors, bone  
morphogenetic protein 2 (rhBMP-2) and insulin-like growth factor I  
(rhIGF-I), were incorporated as a single concn. gradient or reverse  
gradient combining 2 factors in the scaffolds. To assess the gradient  
making system and the delivery efficiency of polylactic-co-glycolic acid  
(PLGA) and silk fibroin microspheres, initially an  
alginate gel was fabricated into a cylinder shape with microspheres  
incorporated as gradients. Compared to PLGA microspheres, silk  
microspheres were more efficient in delivering rhBMP-2, probably due to  
sustained release of the growth factor, while less efficient in delivering  
rhIGF-I, likely due to loading efficiency. The growth factor gradients  
formed were shallow, inducing non-gradient trends in hMSC osteochondral  
differentiation. Aq.-derived silk porous scaffolds were used to  
incorporate silk microspheres using the same gradient process. Both  
growth factors formed deep and linear concn. gradients in the scaffold, as  
shown by ELISA. After seeding with hMSCs and culturing for 5 wk in a  
medium contg. osteogenic and chondrogenic components, hMSCs exhibited  
osteogenic and chondrogenic differentiation along the concn. gradients of  
rhBMP-2 in the single gradient of rhBMP-2 and reverse gradient of  
rhBMP-2/rhIGF-I, but not the rhIGF-I gradient system, confirming that silk  
microspheres were more efficient in delivering rhBMP-2 than rhIGF-I for  
hMSCs osteochondrogenesis. This novel silk microsphere/scaffold system

offers a new option for the delivery of multiple growth factors with  
spatial control in a 3D culture environment for both understanding natural  
tissue growth process and in vitro engineering complex tissue constructs.  
RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> L11 and L5  
L12 0 L11 AND L5

=> d his

(FILE 'HOME' ENTERED AT 02:20:34 ON 04 JUL 2009)

FILE 'REGISTRY' ENTERED AT 02:21:04 ON 04 JUL 2009

L1 0 CYTOKINE/CN  
E CYTOKINE/CN  
E CYTOKINE/  
L2 555 S E 15  
E INTEGRIN/  
E INTEGRIN/CN  
L3 2 S E39  
L4 12890 S E15

FILE 'CAPLUS, BIOSIS, MEDLINE, EMBASE' ENTERED AT 02:24:19 ON 04 JUL 2009

L5 15008 S L3  
L6 57377 S L4  
L7 20659 (CELL GROWTH FACTOR)  
L8 4734 SILK FIBROIN  
L9 47 L5 AND L6  
L10 0 L7 AND L9  
L11 1 L7 AND L8  
L12 0 L11 AND L5

=> (L5 and L6) and L8  
L13 0 (L5 AND L6) AND L8

=> L7 and L8  
L14 1 L7 AND L8

=> l8 and L5  
L15 0 L8 AND L5

=> L6 and L8  
L16 1 L6 AND L8

=> d bib, ti, abs l16

L16 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2009 ACS on STN  
AN 2008:1199756 CAPLUS  
DN 150:530443

TI Inhibitory effect of conditioned medium of silk fibroin  
-treated osteoblasts in osteoclast differentiation

AU Yeo, Joo-Hong; Park, Kyung-Ho; Ju, Won-Chul; Lee, Jinah; Lee, Kwang-Gill;  
Woo, Soon-Ok; Han, Sang-Mi; Kweon, HaeYong; Kim, Sung-Su; Cho, Yunhi

CS Dept. of Agricultural Biology, National Institute of Agricultural Science  
and Technology, Suwon, 441-100, S. Korea

SO Han'guk Sikpum Yongyang Kwahak Hoechi (2008), 37(8), 992-997

Searcher: Kailash C. Srivastava

CODEN: HSYHFB; ISSN: 1226-3311

PB Korean Society of Food Science and Nutrition

DT Journal

LA Korean

TI Inhibitory effect of conditioned medium of silk fibroin

-treated osteoblasts in osteoclast differentiation

AB In this study, we investigated the indirect effect of silk-fibroin on osteoclastic differentiation of RAW264.7 cells. The conditioned medium were collected from MC3T3-E1 osteoblasts treated with 0.001 mg/mL apprx. 0.1 mg/mL silk fibroin for 6 days, mixed in 1:1 ratio with osteoclast medium, and then added into RAW264.7 cells with receptor activator of nuclear factor kappa B ligand (RANKL), a differentiation inducer for 3 days. Of osteoclastic cytokines in the conditioned medium, the protein expression of osteoprotegerin (OPG) with silk-fibroin was not significantly different. However, the protein expression of interleukin (IL)-1 $\beta$  was specifically lower in a dose dependent manner. In RAW264.7 cells, the conditioned medium with silk-fibroin inhibited RANKL induced osteoclastic differentiation as total no. of multinucleated tartrate-resistant alk. phosphatase (TRAP)-pos. osteoclasts in a dose dependent manner. Taken together, we demonstrated that the conditioned medium of silk-fibroin treated osteoblasts inhibits RANKL induced differentiation of osteoclasts with inhibiting selective expression of IL-1 $\beta$ .